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ABSTRACT

Online learning is a relatively young field that is still being defined as a discipline. As faculty members wrestle with decisions about how to structure online courses for collaborative, connected learning, student perspectives of successful courses can provide valuable insights for decision-making. This paper presents general research findings pertaining to collaboration in online learning courses along with personal insights from a second year student in the Nova Southeastern University (Florida) School of Computer and Information Sciences Doctoral Computing Technology in Education program into what makes a project-based online course successful as a collaborative learning experience. The paper begins with general guidelines and a discussion of effective team members and communication as the key to collaboration. Instructor factors are addressed, including the importance of a challenging project, clearly stated project requirements, flexibility in meeting project requirements, subdividing the project, general guidelines for team formation, allocating time for team relationship building, and maintaining a presence with students. Student factors are then described, including defining team member roles, defining team member responsibilities, establishing team goals, establishing team deadlines, guidelines for team communications, guidelines for resolving differences of opinion, scheduling regular online synchronous meetings, and other means of team communications. (Contains 15 references.) (Author/MES)

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Collaborative, Connected, and Experiential Learning: Reflections of an Online Learner

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Abstract:
Online learning is a relatively young field, which is still being defined as a discipline. As faculty members wrestle with decisions about how to structure online courses for collaborative, connected learning, student perspectives of successful courses can provide valuable insights for decision-making. The author, a second year student in Nova Southeastern University's (NSU) School of Computer and Information Sciences (SCIS) Doctoral Computing Technology in Education (DCTE) program, presents general research findings pertaining to collaboration in online learning courses along with personal insights into what makes a project-based online course successful as a collaborative learning experience.

Introduction

While online learning offers students many advantages over campus-based learning, problems do exist. One such problem is the attrition rate of online learners, brought about in large part by a sense of isolation (Adelskold, Aleklett, Axelsson, & Blomgren, 1999). One teaching/learning model, which can ameliorate this sense of isolation, is collaborative learning. Collaborative learning involves students in social interaction, as groups work together to solve problems. Students in distance education programs, though separated spatially, can gain a sense of togetherness as they share and clarify ideas, actively contribute to a team, and cooperatively solve problems (Cecez-Kecmanovic & Webb, 2000).

Until recent times, collaborative approaches to distance learning were limited by the cost and sophistication of the technology. However, with advances in computer technologies and telecommunications, it is now possible to offer collaborative learning experiences in a cost-effective manner. These advances coincide with a general shift in educational theory to a collaborative constructivist conception of learning, which recognizes the learner's need to share control and assume responsibility for constructing meaning in the context of a peer group (Anderson & Garrison, 1998).

However, few studies have been conducted that examine the impact of the collaborative teaching/learning model in the distance-education setting (Hardwick, 2000). As faculty members wrestle with decisions about how to structure online courses for collaborative learning, student perspectives of successful courses can provide valuable insights for decision-making. This paper presents general guidelines for collaborative learning in online courses, along with personal insights into what makes a project-based online course successful as a collaborative learning experience.

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General Guidelines

Collaborative learning is an outgrowth of cooperative learning, in that students must develop cooperative learning skills in order to use them in self-directed, high-performing teams. These teams conduct free inquiry and members jointly solve problems. Success in cooperative learning is grounded in the skills students develop within the context of the structure provided by the instructor. In distance learning, students must possess or develop the technical skills necessary for online communication, as well as acquire and practice social behaviors necessary for collaboration (Kemery, 2000).

Effective Team Members

Instructors should provide guidance for students on how to work effectively in collaborative teams. The social aspects of successful teams should be explicitly taught and not assumed. In order for teams to succeed, certain member qualities must be present. Among those desirable qualities are an ability to clarify and commit to goals, an interest in other team members beyond the task at hand, a desire to confront conflict positively, an understanding of others' perspectives, a commitment to make decisions inclusively, the valuing of individual differences, a willingness to freely contribute ideas and encourage team members, an open and honest evaluation of team performance, and a readiness to celebrate accomplishments (Robbins & Finley, 1995).

Communication: The Key to Collaboration

The essence of project-based, online collaborative learning is communication because positive group formation and learning occur through on-going dialogue (Kemery, 2000). Asynchronous communications can be utilized for much of the collaborative effort, through email with attachments and private forums. Additionally, synchronous private chat rooms can be used advantageously to facilitate collaborative learning (Lai, 1999). Synchronous communications are critical for establishing team roles, responsibilities, goals, deadlines, and for resolving differences of opinion. Team chats are also important for building relationships, encouraging one another, maintaining momentum, and celebrating accomplishments.

Personal Reflections

This section presents personal reflections pertaining to my involvement in a rewarding collaborative experience in one of my first courses taken in NSU's DCTE program. As is true of all courses in the program, it began with a weeklong, on-campus meeting, in which students were introduced to instructors and to one another, and were familiarized with the course content and requirements. The remainder of the course (nearly five months) was conducted entirely online.

Many factors were responsible for the successful implementation of this collaborative online learning experience. While there are several categories of factors, which could be discussed, this paper directs attention to instructor factors and student factors. For the purposes of discussion, instructor factors are defined as those things that the instructor does to facilitate an environment conducive to collaboration. Student factors are defined as those things for which students are responsible if the learning process is to be productive and successful.

Instructor Factors

Challenging project
For collaboration to work, the team project must be challenging enough to demand teamwork. Members need to sense that they are dependent upon one another in order to be successful. If this criterion is met, members will be more likely to appreciate each other's unique contributions. Furthermore, challenging projects emulate real world situations and help prepare learners to be productive members of society.

George K. Fornshell, Ph.D, taught the particular course under consideration, Project in Courseware Design and Development. The course content focused on the design, development, implementation, and evaluation of technology-based, content-intensive courseware. Students worked in teams to master the principles of instructional design (analysis, design, development, implementation, and evaluation). Team members jointly developed an educational courseware product. This development process included planning the product, creating a working prototype of the content-rich courseware, alpha/beta testing the product, and reflecting on the learning experience.

Clearly stated project requirements
Clearly stated project requirements give team members a common starting point and provide a structure upon which to build. They also assist students with the planning of collaborative work responsibilities. The instructor provided the following outline for our courseware design and development project:

Assignment 1: Analysis and Design
Part 1: Product Review (individual submission)
Part 2: Instructional Design (team submission)
Assignment 2: Implementation (team submission)
Part 1: Written Materials --Summary description of product
Part 2: Electronic Product
Assignment 3: Evaluation and Reflections
Part 1: Evaluation (team submission)
Alpha test (evaluation forms and summary)
Beta test (evaluation forms and summary)
Part 2: Reflection (individual submission)
A personal communication from the student to the professor concerning the overall learning experience

Flexibility in meeting project requirements
Flexibility in meeting project requirements balances the provision of clearly stated requirements. Flexibility enables students to develop ownership of the project, provides room for creativity, aids in the development of critical thinking skills, and encourages a sense of team unity and individuality.

Each team was permitted to freely choose what its educational unit would be. The only requirement was that the product needed to be a complete unit of study with educational value. Our team chose to develop a photography unit because I was experienced in that area and could act as the Subject Matter Expert (SME) for the team. I also had an

extensive collection of photographs and a scanner for converting them to a digital format. Other team members were more experienced with the technical aspects of the project.

Subdividing the project

The instructor, by properly subdividing a project, can help teams manage a challenging task, encourage teams to keep on schedule, and provide opportunities for important instructor feedback during the process. Our project was divided into three assignments with two parts for each, resulting in six separate submissions. The first assignment had two parts: an individual submission and a team submission. This technique allowed students to receive both individual and group feedback early in the term.

General guidelines for team formation

Providing guidelines for team formation is critical for team success and cannot be overemphasized. Team formation guidelines help students choose team members intelligently, aid in the formation of team member roles, and help provide a basis for mutual respect among team members. General guidelines for creating teams were presented both by the professor (Dr. Fornshell) and by a guest professor (Dr. Abramson) during the weeklong, on-campus session. The importance of having a balance of skills on the team was emphasized. Additionally, the various roles in the instructional design team were discussed so students would have an idea of what skills were necessary and important to have on the teams.

Allocating time for team relationship building

Relationship building allows team members to get to know and appreciate one another's strengths and weaknesses, facilitates the initial ideation stage of project development, and lays the foundation for a successful collaborative experience. When it comes to team relationship building, NSU's DCTE program structure and other hybrid programs (having both on-campus and online requirements) afford, in my opinion, an advantage over purely online programs.

The weeklong, face-to-face session at the beginning of the term provided time and proximity for team relationship building. During the week, Dr. Fornshell built ample time into the schedule for students to mingle and form teams. He also provided opportunities for the teams to meet and begin to formulate project plans. Important brainstorming sessions enabled our team to discuss several options before finally settling on the photography idea.

Maintaining a presence with students

It is very important in online courses for the instructor to maintain a presence with the students. Dr. Fornshell accomplished this by assuming the role of an office manager for all the design teams. He sent timely emails, which served to help manage the various teams and to ensure that things were proceeding smoothly with the groups. He also provided models for unfamiliar products, such as examples of flowcharts and representative storyboards. These project requirements needed additional explanation because the finished products were dependent upon the context in which they were developed. Dr. Fornshell managed to achieve a delicate balance between providing

enough guidance and allowing teams sufficient freedom. I never felt like he was micro-managing the project.

Student Factors

Instructors can only do so much to facilitate rewarding collaborative learning experiences. In the final analysis, team members play an important role in the success of the project. Our team (the ShootSmart group) consisted of four members with varied backgrounds. Randy (from New Jersey) is a technology coordinator for a K-12 school district. Bob (from Connecticut) is in charge of technology staff development at his K-12 school. Chris (from Germany) teaches technical English at the university level. I (Bruce) am from Tennessee and teach art at the elementary level. I was also a landscape architect for 15 years prior to entering the field of education. Our ages range from 26 (Bob) to 46 (me). In what follows, are personal reflections on factors, which I believe were important in making our group successful.

Defining team member roles

The diversity of backgrounds was our team's strength. It made defining team roles a natural process. Clear and distinct roles aided in team communications and gave members a sense of responsibility and importance. They also assisted in assigning work responsibilities and made project management easier. Our roles were project manager (Randy), SME (me), Web design/layout (Bob), and Web programming (Chris). Because Dr. Fornshell provided considerable latitude in determining instructional units, our team was able to choose a subject that fit our varied backgrounds. It was no accident that our team chose photography as its unit of instruction. Because I did not have the level of technical expertise that my cohorts had, a decision was made to choose a subject in which I was the SME. This decision empowered me to make a significant contribution to the team.

Defining team member responsibilities

Project responsibilities proceeded directly and naturally from team member roles. Responsibilities and authority in the given areas of responsibility were well defined. While some overlap existed, individual team members were given more decision-making authority in their various areas of expertise. This principle was used throughout the ShootSmart project and was helpful in resolving disagreements.

Establishing team goals

Team goals should encourage a standard of excellence, be challenging yet reasonable and doable, and be agreed upon by all team members. Our group used online synchronous meetings to gain consensus on goals. The accomplishment of those goals was celebrated online throughout the course of the project, as each deadline was met.

Establishing team deadlines

The major deadlines were set by the professor and were based on experience teaching the class. However, team members also had the opportunity to establish sub-deadlines. These were set well before the actual deadlines to give members time to review and correct work prior to submission. Additionally, major portions of work were subdivided in order

to meet schedules. In collaborative efforts, the project manager, by virtue of his role and responsibility, should have more authority in setting deadlines. However, team members must also be convinced that the work can be done in the allotted time. Once set, team members should hold each other accountable for meeting deadlines with encouragement and weekly meetings.

Guidelines for team communications
In order for collaboration to work, team members must be respectful and considerate of one another, must understand that everyone's opinions and thoughts are valued, and must be open and honest with communication (frankness is desirable for group members as time is critical). Our team communicated in a professional manner. We managed to balance respect and consideration with open frankness. There were disagreements, but they were resolved in a civil manner. The fast pace of work demanded that members communicate in an honest, clear, and concise manner.

Guidelines for resolving differences of opinion
Conflicts concerning the project were resolved by listening to all arguments, debating, and coming to a decision. Decisions were based on ideas and not on personalities. Team members were concerned with the quality of the project and different perspectives were considered important for developing good solutions to problems. As project manager, we looked to Randy when consensus could not be reached. In the rare cases where there was an impasse, we put the issue to a vote. We were each voted down at least once during the project. The project was better because of these healthy debates.

Scheduling regular online synchronous meetings
Of all the communication tools used during the project, the weekly AOL Instant Messenger (AIM) chat room meetings were perhaps the most important to the success of the project. We established a time to meet each week, and followed through on these meetings throughout the term. The time was 4:30pm Central to accommodate everyone's work schedules. It was 11:30pm for Chris, who was in Germany.
These meetings were extremely productive and were used for a variety of purposes. In addition to brainstorming, resolving problems, coming to consensus, setting time schedules, maintaining enthusiasm through group synergy, and generally having fun, these meetings were also used to refine papers prior to submission. The time difference worked well for the team. After one of our online meetings, Chris (in Germany) would go to bed and the rest of us would continue to work through the evening. When Chris woke the following morning, his email would be waiting with attached content to integrate into the Web-based courseware.

Other means of team communications
In addition to the weekly online meetings, we used email with attachments to follow up discussions and to send subject matter content for inclusion into the ShootSmart Web site (Curry, D.B., Johnson, C., Palmer, R., & Polselli, R.N., 1999). The attachments were mostly in the form of Word documents and PowerPoint files. The subject matter content was sent in PowerPoint files, which acted as mockups for the individual Web pages. Additionally, Chris created a private, threaded discussion forum and Randy created a

Web page for posting the project schedule and due dates.

Summary

Online collaborative project-based courses can be extremely rewarding experiences if certain elements are present. A thoughtful instructor, capable of balancing guidance with freedom is one critical factor. Another is a team with the skills, both technical and social, to truly collaborate. When those two factors and all they entail come together in a learning environment, collaborative projects can result in outcomes far exceeding the expectations of the professor. Such is the case in this example. The friendships formed through this collaborative process are strong to this day. The ShootSmart team remains intact and each of us benefits continually from the mutual encouragement we receive from one another in the online learning environment. This collaborative, connected, learning experience is truly the highlight of my educational career, thus far.

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